BASIS FOR THE AMENDMENT

Claims 12-33 are active in the present application. Claims 1-11 have been canceled. Claims 12-32 are new claims. Support for new independent Claim 12 is found in original Claim 1; the specification on page 20, lines 14-39; and the Examples. Support for new Claims 13-14 is found on page 20, lines 31-39. Support for new Claims 15-18 is found on page 20, lines 14-29. Support for new Claim 19 is found on page 2, lines 16-23. Support for new Claims 20-22 is found in Table 2 on page 25. Support for new Claim 23 is found on page 26, lines 26-29. Support for new Claim 24 is found in original Claim 2. Support for new Claim 25 is found in original Claim 3. Support for new Claims 26-27 is found in original Claim 4. Support for new Claim 28 is found in original Claim 5. Support for new Claim 29 is found in original Claim 7. Support for new Claim 30 is found in original Claim 8. Support for new Claim 31 is found on page 20, line 34. Support for new Claim 32 is found throughout the specification and in original Claim 11. Support for new Claim 33 is found throughout the specification. No new matter is believed to have been added by this amendment.

REQUEST FOR RECONSIDERATION

Applicants thank Examiner Egwim for the helpful and courteous discussion of April 13, 2005. During the discussion, Applicants' U.S. representative provided arguments that a process for preparing a filter material that included resinating a filter material with a certain aqueous dispersion to provide a resinated and cured filter paper having improved physical characteristics without a significant penalty on permeability or pore size is not disclosed or suggested by the prior art of record.

The Office rejected original Claims 1-3 under 35 U.S.C. §112 and 35 U.S.C. §101. The amendment to the claims obviates the rejection.

New independent Claim 12 has been added. New Claim 12 is drawn to a process that includes resinating a filter material and curing the resinated filter material. Claim 12 is drawn to "a filter material treatment process". The original "use" claims were drawn to "the use of an aqueous polymer dispersion...as a binder for producing filter materials". Applicants submit that a filter material treatment process is within the scope of the original invention and supported by the specification such as page 20, lines 41-45.

The claimed process may provide a filter material having improved physical characteristics without negatively affecting the filter characteristics of the filter paper as measured by permeability and/or pore size. The specification describes various embodiments of the invention as follows:

> Binders for filter materials such as filter paper or filter cloth must impart to the substrate qualities including high mechanical stability (tensile strength, bursting strength), particularly after storage under damp conditions at elevated temperature. *Binders* of this kind *are further required* to ensure high chemical resistance, under the action of solvents for example, *and ought to have very little effect, if any, on the permeability (pore size) of the filter material.*
>
> In the manufacture of filter materials, binders having a very high acid group content have occasionally to date been found disadvantageous on account of the fact that filter materials

> *based on cellulose fibers and consolidated with these binders occasionally have a reduced stability*, which is manifested, among other things, in *reduced bursting strength* in long-term testing or after storage at elevated temperature.
>
> The aqueous polymer dispersions described are used in accordance with the invention as binders for producing filter materials, especially filter papers or filter cloths (page 20, lines 14-16).
>
> Application of the polymer dispersion for inventive use to the filter materials, i.e., to filter paper or filter cloth, inter alia, is accomplished preferably by the impregnating method or by spraying (page 20, lines 31-34.
>
> *The inventive use of the aqueous polymer dispersion as a binder for filter materials means that the treated filter materials have, among other qualities, an enhanced mechanical stability (higher tensile strength and bursting strength)*, especially after storage under damp conditions and at elevated temperature. The inventive use of the aqueous binders also has the effect that the resultant filter materials are characterized by qualities including high chemical resistance, to solvents for example, without any affect on the permeability (pore size) of the filter material. Through the use of the aqueous polymer dispersions it is also observed that they give the filter materials a high strength even after drying (dry tensile strength), and yet after drying below the curing temperature of the aqueous polymer dispersions the filter materials can still be readily subjected to deformation by folding, grooving or pleating (paragraph bridging pages 20-21).

Thus the named inventors have described a process by which a filter material may be imparted with improved mechanical characteristics without negatively affecting the filtration capability of the filter paper.

The impregnating (i.e., resinating) of the filter material with a certain aqueous polymer dispersion is shown by Applicants to provide filter material of improved mechanical characteristics, for example, improved bursting strength, without appreciable loss in permeability. The data are determined by Akustron air permeability as measured by ISO 9237 (see Examples and Tables II and III). The improved performance of filter materials treated with the aqueous polymer dispersion recited in the present independent claim show improved performance such as greater bursting pressure without sacrificing air permeability.

The results of several Examples are presented in Table II on page 25 of the specification.

Table II is reproduced below for convenience.

Table II

Product ID:	Base paper	Base paper	Bakelite 9599	E1	E3	Ex. 1 +30% f/f epoxy*	Ex. 1 +30% f/f PU**	Ex. 1 +1% f/f silane***	Ex. 3 +30% f/f epoxy*	Ex. 3 +30% f/f PU**	Ex. 3 + 1% f/f silane***
Filter material tests											
Methanol fraction [%]		100	100	80	80	80	80	80	80	80	80
Drying 5 min at 59°C, curing 3 min at 180°C	|	|	|	|	|	|	|	|	|	|	|
Bursting pressure Dry (kPa)	**45**	**45**	**303**	**300**	**339**	**370**	**311**	**318**	**386**	**371**	**347**
Akustron air permeability Dry (mm/s)	**971**	**971**	**986**	**927**	**958**	**845**	**934**	**953**	**953**	**953**	**942**

Of note in Table II is the row entitled Methanol Fraction [%]. Some of the Examples are measured at a methanol fraction of only 80% whereas other examples are measured at a methanol fraction of 100%. An 80% methanolic fraction indicates that the remaining 20% fraction is water.

Applicants submit that it is generally recognized in the art that phenol/formaldehyde resins have a greater solubility in methanol than in a methanol/water mixture. Thus the filtration of a solution containing a phenol/formaldehyde resin in methanol is expected to filter more quickly and more efficiency than a phenol formaldehyde resin dissolved in a methanol/water mixture. The Inventive Examples are therefore "handicapped" by having water present in comparison to the comparative examples wherein solubility is improved by having a greater amount of methanol present (e.g., 100% methanol solution).

Regardless of this distinction Applicants submit the data in the Table II demonstrate that a filter material obtained by the treatment process of present independent Claim 7 may provide significantly improved performance (i.e., permeability) without sacrificing the permeability of the treated filter membrane. This is demonstrated, for example, in Table II where the Akustron air permeability meter consistently measures air permeability at greater than 950 mm/s in the prior art (e.g., inventive) examples. In contrast, the filter membranes of the comparative examples provide similar permeability characteristics however, with substantially greater bursting pressure performance.

Table III on page 26 of the specification provides additional performance comparisons between Inventive and Comparative Examples. Table III is reproduced below for convenience. The two inventive examples (E3) are shown to have a much higher bursting pressure threshold (e.g., 300 kPa) in comparison to 147 kPa for the prior art (e.g., conventional) filter paper.

Product ID:	**E3**	**E3**	**Bakelite 9599**
Disp. number:			
Filter material tests	**Filter paper 105 g/m^2**		
Methanol fraction in % drying 5 min 50°C curing 3 min 180°C	80	80	100
Bursting pressure 5 min 50°C (kPa)	300	300	147
Bursting pressure curing 3 min 180°C after 4 weeks of storage at RT (kPa)	294	315	320

Applicants submit that the claimed filter material treatment process provides a filter material having significantly superior bursting strength without sacrificing permeability and is therefore not obvious in view of the prior art cited by the Office.

In paragraph 8 of the Office Action of March 10, 2005, the Office states that U.S. patents Dreher I (U.S. 6,841,608) and Dreher II (U.S. 6,262,159) "may be of particular relevance to Applicants' invention." Applicants submit that neither the Dreher I or Dreher II patents disclose a method for treating a filter material by resinating a filter material and then curing the resinated filter material. In fact, neither Dreher I nor Dreher II disclose filters. The aqueous polymer dispersions of Dreher I are described as useful "as binders for moldings" (column 1, lines 6-7) and "it is an object of the present invention to provide formaldehyde-free binders for substrates, such as moldings, for example" (column 3, lines 39-41).

While Dreher I may disclose the use of an aqueous polymer dispersion as a binder for mixtures of fibrous and particulate materials, Dreher I does not disclose that improved bursting strength can be obtained in filter materials by treating the filter materials with the aqueous polymer dispersion recited in the claims. Dreher I further does not disclose that an

improved filter material having better mechanical characteristics without sacrificing permeability or pore size may be obtained (see new dependent Claims 20-22).

Dreher II discloses the use of a binder beginning at column 9, line 33. However, like Dreher I, Dreher II does not disclose resinating a filter material and curing the resinated filter material to provide a filter material of improved mechanical characteristics without sacrificing the permeability of the filter material.

Applicants submit the new claims are novel and not obvious in view of the prior art cited by the Office. Applicants respectfully request the withdrawal of the rejection and the allowance of all now-pending claims.

Respectfully submitted,

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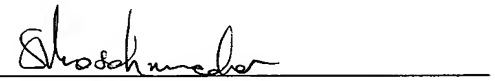

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